

Sequence listing.txt
SEQUENCE LISTING

<110> Chua, Kaw Yan
Liew, Lip Nyin

<120> RECOMBINANT NUCLEIC ACID USEFUL FOR INDUCING PROTECTIVE IMMUNE
RESPONSE AGAINST ALLERGENS

<130> 92706-58

<160> 49

<170> PatentIn version 3.2

<210> 1
<211> 216
<212> DNA
<213> artificial

<220>
<223> synthetic oligonucleotide encoding for the leader sequence, the
transmembrane and cytoplasmic tail of Mus musculus LAMP-1, containing
Nhe I site 3' of the LAMP-1 leader sequence and Nde I site 5' of
the LAMP-1 transmembrane and cytoplasmic tail sequence

<400> 1
ctcgagccac catggccgcc cccggcgccc ggaggcccct gtcctgctg ctgctggcag 60
gccttgacaca tggcgctagc gaattcccgg ggatccatat gttgatcccc attgctgtgg 120
gcggtgccct ggcagggctg gtcctcatcg tcctcatcgc ctacctcatt ggcaggaaga 180
ggagtcacgc cggctatcag accatctagc ggccgc 216

<210> 2
<211> 234
<212> DNA
<213> artificial

<220>
<223> chimeric gene that encodes the Mus musculus LAMP-1 leader sequence, the Blo
t5 gene fragment for the H-2d-restricted Th epitope and the Mus musculus
LAMP-1 transmembrane and cytoplasmic domain

<400> 2
atggccgccc ccggcgcccc gagggcccctg ctctgctgc tgctggcagg ccttgacacat 60
ggcgctagcg cagaattgca agagaaaatc attcgagaac ttgatgttgt ttgcgccatg 120
aatatgttga tccccattgc tgtgggcggg gccctggcag ggctggctct catcgtcctc 180
attgcctacc tcattggcag gaagaggagt cacgccggct atcagaccat ctag 234

<210> 3
<211> 534
<212> DNA
<213> artificial

<220>
<223> chimeric gene that encodes the Mus musculus LAMP-1 leader sequence, the

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entire Blo t 5 gene product and the Mus musculus LAMP-1 transmembrane and cytoplasmic domain

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<400> 3
atggccgccc ccggcgcccc gagggcccctg ctcttgctgc tgctggcagg ccttgacat      60
ggcgctagcc aagagcacao gccaaagaag gatgatttcc gaaacgaatt cgatcacttg      120
ttgatcgaac aggcaaacca tgctatcgaa aaggggagaac atcaattgct ttacttgcaa      180
caccaactcg acgaattgaa tgaaaacaag agcaaggaat tgcaagagaa aatcattcga      240
gaacttgatg ttgtttgctc catgatcgaa ggagcccaag gagctttgga acgtgaattg      300
aagcgaactg atcttaacat tttggaacga ttcaactacg aagaggctca aactctcagc      360
aagatcttgc ttaaggattt gaaggaaacc gaacaaaaag tgaaggatat tcaaacccaa      420
aatatgttga tccccattgc tgtgggcggt gccctggcag ggctggctct catcgtcctc      480
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<210> 4
<211> 426
<212> DNA
<213> artificial
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<220>
<223> chimeric gene that encodes the Mus musculus LAMP-1 leader sequence and the
entire Blo t 5 gene product
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<400> 4
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ttgatcgaac aggcaaacca tgctatcgaa aaggggagaac atcaattgct ttacttgcaa      180
caccaactcg acgaattgaa tgaaaacaag agcaaggaat tgcaagagaa aatcattcga      240
gaacttgatg ttgtttgctc catgatcgaa ggagcccaag gagctttgga acgtgaattg      300
aagcgaactg atcttaacat tttggaacga ttcaactacg aagaggctca aactctcagc      360
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aattaa                                           426
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<210> 5
<211> 849
<212> DNA
<213> artificial
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<220>
<223> chimeric gene that encodes the Mus musculus LAMP-1 leader sequence, the
entire Der p 1 gene product and the Mus musculus LAMP-1 transmembrane and
cytoplasmic domain
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<400> 5
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atggccgccc ccggcgcccc gagggcccctg ctcctgctgc tgctggcagg ccttgacat	60
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caaatgcgaa ctgtcactcc cattcgtatg caaggaggct gtggttcatt ttgggctttc	180
tctggtgttg ccgcaactga atcagcttat ttggcttacc gtaatcaatc attggatctt	240
gctgaacaag aattagtcga ttgtgcttcc caacacgggt gtcattggtga taccattcca	300
cgtggtattg aatacatcca acataatggt gtcgtccaag aaagctacta tcgatacggt	360
gcacgagaac aatcatgccg acgaccaaatt gcacaacggt tcggtatctc aaactattgc	420
caaatttacc caccaaattg aaacaaaatt cgtgaagctt tggctcaaac ccacagcgct	480
attgccgtca ttattggcat caaagattta gacgcattcc gtcattatga tggccgaaca	540
atcattcaac gcgataatgg ttaccaacca aactatcacg ctgtcaacat tgttggttac	600
agtaacgcac aagggtgtcga ttattggatc gtacgaaaca gttgggatac caattggggt	660
gataatgggt acggttattt tgctgccaac atcgatttga tgatgattga agaatatcca	720
tatgttgtca ttctcaatat gttgatcccc attgctgtgg gcggtgccct ggcagggctg	780
gtcctcatcg tcctcatcgc ctacctcatt ggcaggaaga ggagtcacgc cggctatcag	840
accatctag	849

<210> 6
 <211> 879
 <212> DNA
 <213> artificial

<220>
 <223> chimeric gene that encodes the Homo sapiens tissue plasminogen activator leader sequence, the entire Der p 1 gene product and the Mus musculus LAMP-1 transmembrane and cytoplasmic domain

<400> 6	
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atcaacggca atgccccgc tgagattgat ctgcgccaga tgaggaccgt gactcccatc	180
cgcatgcaag gcggctgcgg gtcttggttg gccttctcag gcgtggccgc gaccgagtct	240
gcatacctcg cgtatcgga tcaagacctg gacctcgtg agcaggagct cgttgactgc	300
gcctcccaac acggatgtca tggggatacg attcccagag gtatcgaata catccagcat	360
aatggcgctg tgcaggaaag ctattaccga tacgtagcta gggagcagtc ctgccgccgt	420
cctaacgccc agcgcttcgg catttccaac tattgccaga tctaccccc taatgtgaac	480
aagatcaggg aggccctggc gcagacgcac agcgccatcg ctgtcatcat cggaatcaag	540
gatctggacg cattccggca ctatgacggg cgcaaatca tccagcgca caacggatac	600
cagccaaact atcacgcggt caacatcgtg gggtactcga acgcccaggg ggtggactac	660

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tggatcgtgc ggaacagttg ggacaccaac tggggcgaca acggctacgg ctactttgcc	720
gccaacatcg acctgatgat gatcgaagag taccctgacg tggatgacct gttgatcccc	780
attgctgtgg gcggtgccct ggcagggctg gtcctcatcg tcctcattgc ctacctcatt	840
ggcaggaaga ggagtcacgc cggctatcag accatctag	879

<210> 7
 <211> 26
 <212> PRT
 <213> Rattus norvegicus LIMP II Leader peptide

<400> 7

Met	Ala	Arg	Cys	Cys	Phe	Tyr	Thr	Ala	Gly	Thr	Leu	Ser	Leu	Leu	Leu
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Leu	Val	Thr	Ser	Val	Thr	Leu	Leu	Val	Ala
			20					25	

<210> 8
 <211> 46
 <212> PRT
 <213> Rattus norvegicus LIMP II Transmembrane cytoplasmic domain

<400> 8

Leu	Ile	Val	Thr	Asn	Ile	Pro	Tyr	Ile	Ile	Met	Ala	Leu	Gly	Val	Phe
1				5					10					15	

Phe	Gly	Leu	Ile	Phe	Thr	Trp	Leu	Ala	Cys	Arg	Gly	Gln	Gly	Ser	Thr
			20					25					30		

Asp	Glu	Gly	Thr	Ala	Asp	Glu	Arg	Ala	Pro	Leu	Ile	Arg	Thr
		35					40					45	

<210> 9
 <211> 26
 <212> PRT
 <213> Homo sapiens LIMP II Leader peptide

<400> 9

Met	Gly	Arg	Cys	Cys	Phe	Tyr	Thr	Ala	Gly	Thr	Leu	Ser	Leu	Leu	Leu
1				5					10					15	

Leu	Val	Thr	Ser	Val	Thr	Leu	Leu	Val	Ala
			20					25	

<210> 10
 <211> 46
 <212> PRT
 <213> Homo sapiens LIMP II Transmembrane cytoplasmic domain

Sequence listing.txt

<400> 10

Leu Ile Ile Thr Asn Ile Pro Tyr Ile Ile Met Ala Leu Gly Val Phe
1 5 10 15

Phe Gly Leu Val Phe Thr Trp Leu Ala Cys Lys Gly Gln Gly Ser Met
20 25 30

Asp Glu Gly Thr Ala Asp Glu Arg Ala Pro Leu Ile Arg Thr
35 40 45

<210> 11

<211> 26

<212> PRT

<213> Mus musculus LIMP II Leader peptide

<400> 11

Met Gly Arg Cys Cys Phe Tyr Thr Ala Gly Thr Leu Ser Leu Leu Leu
1 5 10 15

Leu Val Thr Ser Val Thr Leu Leu Val Ala
20 25

<210> 12

<211> 46

<212> PRT

<213> Mus musculus LIMP II Transmembrane cytoplasmic domain

<400> 12

Leu Val Val Thr Asn Ile Pro Tyr Ile Ile Met Ala Leu Gly Val Phe
1 5 10 15

Phe Gly Leu Val Phe Thr Trp Leu Ala Cys Arg Gly Gln Gly Ser Met
20 25 30

Asp Glu Gly Thr Ala Asp Glu Arg Ala Pro Leu Ile Arg Thr
35 40 45

<210> 13

<211> 27

<212> PRT

<213> Homo sapiens DEC-205 Leader peptide

<400> 13

Met Arg Thr Gly Trp Ala Thr Pro Arg Arg Pro Ala Gly Leu Leu Met
1 5 10 15

Leu Leu Phe Trp Phe Phe Asp Leu Ala Glu Pro
20 25

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<210> 14
<211> 56
<212> PRT
<213> Homo sapiens DEC-205 Transmembrane cytoplasmic domain

<400> 14
Tyr Thr Ala Ile Ala Ile Ile Val Ala Thr Leu Ser Ile Leu Val Leu
1          5          10          15

Met Gly Gly Leu Ile Trp Phe Leu Phe Gln Arg His Arg Leu His Leu
          20          25          30

Ala Gly Phe Ser Ser Val Arg Tyr Ala Gln Gly Val Asn Glu Asp Glu
          35          40          45

Ile Met Leu Pro Ser Phe His Asp
    50          55

<210> 15
<211> 27
<212> PRT
<213> Mus musculus DEC-205 Leader peptide

<400> 15
Met Arg Thr Gly Arg Val Thr Pro Gly Leu Ala Ala Gly Leu Leu Leu
1          5          10          15

Leu Leu Leu Arg Ser Phe Gly Leu Val Glu Pro
          20          25

<210> 16
<211> 56
<212> PRT
<213> Mus musculus DEC-205 Transmembrane cytoplasmic domain

<400> 16
Tyr Thr Gly Ile Ala Ile Leu Phe Ala Val Leu Cys Leu Leu Gly Leu
1          5          10          15

Ile Ser Leu Ala Ile Trp Phe Leu Leu Gln Arg Ser His Ile Arg Trp
          20          25          30

Thr Gly Phe Ser Ser Val Arg Tyr Glu His Gly Thr Asn Glu Asp Glu
          35          40          45

Val Met Leu Pro Ser Phe His Asp
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<210> 17

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<211> 41
 <212> PRT
 <213> Homo sapiens P-selectin Leader peptide
 <400> 17
 Met Ala Asn Cys Gln Ile Ala Ile Leu Tyr Gln Arg Phe Gln Arg Val
 1 5 10 15

Val Phe Gly Ile Ser Gln Leu Leu Cys Phe Ser Ala Leu Ile Ser Glu
 20 25 30

Leu Thr Asn Gln Lys Glu Val Ala Ala
 35 40

<210> 18
 <211> 59
 <212> PRT
 <213> Homo sapiens P-selectin Transmembrane cytoplasmic domain
 <400> 18

Leu Thr Tyr Phe Gly Gly Ala Val Ala Ser Thr Ile Gly Leu Ile Met
 1 5 10 15

Gly Gly Thr Leu Leu Ala Leu Leu Arg Lys Arg Phe Arg Gln Lys Asp
 20 25 30

Asp Gly Lys Cys Pro Leu Asn Pro His Ser His Leu Gly Thr Tyr Gly
 35 40 45

Val Phe Thr Asn Ala Ala Phe Asp Pro Ser Pro
 50 55

<210> 19
 <211> 17
 <212> PRT
 <213> Homo sapiens tyrosinase Leader peptide
 <400> 19

Met Leu Leu Ala Val Leu Tyr Cys Leu Leu Trp Ser Phe Gln Thr Ser
 1 5 10 15

Ala

<210> 20
 <211> 30
 <212> PRT
 <213> Homo sapiens tyrosinase Transmembrane cytoplasmic domain
 <400> 20

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Cys Arg His Lys Arg Lys Gln Leu Pro Glu Glu Lys Gln Pro Leu Leu
1 5 10 15

Met Glu Lys Glu Asp Tyr His Ser Leu Tyr Gln Ser His Leu
20 25 30

<210> 21
<211> 24
<212> PRT
<213> Homo sapiens GLUT4 Leader peptide

<400> 21

Met Pro Ser Gly Phe Gln Gln Ile Gly Ser Glu Asp Gly Glu Pro Pro
1 5 10 15

Gln Gln Arg Val Thr Gly Thr Leu
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<210> 22
<211> 43
<212> PRT
<213> Homo sapiens GLUT4 Transmembrane Cytoplasmic domain

<400> 22

Arg Val Pro Glu Thr Arg Gly Arg Thr Phe Asp Gln Ile Ser Ala Ala
1 5 10 15

Phe His Arg Thr Pro Ser Leu Leu Glu Gln Glu Val Lys Pro Ser Thr
20 25 30

Glu Leu Glu Tyr Leu Gly Pro Asp Glu Asn Asp
35 40

<210> 23
<211> 21
<212> PRT
<213> Rattus norvegicus endotubin Leader peptide

<400> 23

Met Cys Leu Pro Ser Cys Leu Leu Ser Ile Trp Val Leu Phe Met Ala
1 5 10 15

Ala Gln Ser Leu Gly
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<210> 24
<211> 66
<212> PRT
<213> Rattus norvegicus endotubin Transmembrane Cytoplasmic domain

<400> 24

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Ala Ala Pro Val Ser Val Pro Val Ala Val Gly Gly Ala Leu Leu Leu
1 5 10 15

Phe Leu Leu Leu Leu Gly Leu Gly Gly Trp His Trp Leu Gln Lys Gln
20 25 30

His Leu Pro Cys Gln Ser Thr Asp Ala Ala Ala Ser Gly Phe Asp Asn
35 40 45

Ile Leu Phe Asn Ala Asp Gln Val Thr Leu Pro Glu Ser Ile Thr Ser
50 55 60

Asn Pro
65

<210> 25
<211> 23
<212> PRT
<213> Mus musculus LAMP-1 leader peptide

<400> 25

Met Ala Ala Pro Gly Ala Arg Arg Pro Leu Leu Leu Leu Leu Leu Ala
1 5 10 15

Gly Leu Ala His Gly Ala Ser
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<210> 26
<211> 36
<212> PRT
<213> Mus musculus LAMP-1 transmembrane and cytoplasmic domain

<400> 26

Met Leu Ile Pro Ile Ala Val Gly Gly Ala Leu Ala Gly Leu Val Leu
1 5 10 15

Ile Val Leu Ile Ala Tyr Leu Ile Gly Arg Lys Arg Ser His Ala Gly
20 25 30

Tyr Glu Thr Ile
35

<210> 27
<211> 78
<212> DNA
<213> Rattus norvegicus LIMP II leader peptide

<400> 27

atggcccgat gctgcttcta cacggcgggg acactgtctc tgctgctgct ggtgaccagt 60

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gtcacgctgc tagtggct	78
<210> 28	
<211> 141	
<212> DNA	
<213> Rattus norvegicus LIMP II Transmembrane cytoplasmic domain	
<400> 28	
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gcacccctca tacggaccta a	141
<210> 29	
<211> 78	
<212> DNA	
<213> Homo sapiens LIMP II Leader peptide	
<400> 29	
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gtcacgctgc tgggtggcc	78
<210> 30	
<211> 141	
<212> DNA	
<213> Homo sapiens LIMP II Transmembrane cytoplasmic domain	
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gcacccctca ttcgaaccta a	141
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<211> 78	
<212> DNA	
<213> Mus musculus LIMP II Leader peptide	
<400> 31	
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<210> 32	
<211> 141	
<212> DNA	
<213> Mus musculus LIMP II Transmembrane cytoplasmic domain	
<400> 32	
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ttcacgtggc tggcgtgtcg aggacagggg tctatggatg aggggaactgc agatgaaaga	120
gcacccctca tacgaaccta a	141

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<210> 33
<211> 81
<212> DNA
<213> Homo sapiens DEC-205 Leader peptide

<400> 33
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ttcttcgata tcgaggagcc c 81

<210> 34
<211> 171
<212> DNA
<213> Homo sapiens DEC-205 Transmembrane cytoplasmic domain

<400> 34
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gcacaaggag tgaatgaaga tgagattatg cttccttctt tccatgacta a 171

<210> 35
<211> 81
<212> DNA
<213> Mus musculus DEC-205 leader peptide

<400> 35
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tccttcgggc ttgtggagcc t 81

<210> 36
<211> 171
<212> DNA
<213> Mouse DEC-205 Transmembrane cytoplasmic domain

<400> 36
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<210> 37
<211> 123
<212> DNA
<213> Homo sapiens P-selectin Leader peptide

<400> 37
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gca 123

<210> 38

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Sequence listing.txt

<211> 180
 <212> DNA
 <213> Homo sapiens P-selectin Transmembrane cytoplasmic domain

<400> 38
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<210> 39
 <211> 51
 <212> DNA
 <213> Homo sapiens tyrosinase Leader peptide

<400> 39
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<210> 40
 <211> 93
 <212> DNA
 <213> Homo sapiens tyrosinase Transmembrane cytoplasmic domain

<400> 40
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 gattaccaca gcttgatatca gagccattta taa 93

<210> 41
 <211> 72
 <212> DNA
 <213> Homo sapiens GLUT4 Leader peptide

<400> 41
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 actgggaccc tg 72

<210> 42
 <211> 129
 <212> DNA
 <213> Homo sapiens GLUT4 Transmembrane Cytoplasmic domain

<400> 42
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 aacgactga 129

<210> 43
 <211> 63
 <212> DNA
 <213> Rattus norvegicus endotubin Leader peptide

<400> 43
 atgtgcctgc ctagctgcct cctctcaatc tgggtcctat ttatggctgc acagtctcta 60

Sequence listing.txt

ggc 63

<210> 44
<211> 201
<212> DNA
<213> Rattus norvegicus endotubin Transmembrane cytoplasmic domain

<400> 44
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ctgggccttg gaggttggca ctggctgcag aagcagcacc tcccctgcca aagtacagat 120
gcagcagcct ctggctttga caatatcctc ttcaatgcgg atcaagttac cctcccagaa 180
tcaatcacca gtaaccata g 201

<210> 45
<211> 69
<212> DNA
<213> Mus musculus LAMP-1 leader sequence
<400> 45
atggccgccc ccggcgcccc gagggcccctg ctctgtctgc tgctggcagg ccttgacat 60
ggcgctagc 69

<210> 46
<211> 108
<212> DNA
<213> Mus musculus LAMP-1 transmembrane cytoplasmic domain
<400> 46
atgttgatcc ccattgctgt gggcggtgcc ctggcagggc tggctctcat cgtcctcatc 60
gcctacctca ttggcaggaa gaggagtcac gccggctatc agaccatc 108

<210> 47
<211> 105
<212> DNA
<213> Homo sapiens tissue plasminogen activator leader sequence
<400> 47
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tcgcccagcc aggttggtgt gcaggacccc tgtgtcccgc ccctc 105

<210> 48
<211> 35
<212> PRT
<213> Homo sapiens tissue plasminogen activator leader sequence
<400> 48

Met Asp Ala Met Lys Arg Gly Leu Cys Cys Val Leu Leu Leu Cys Gly
1 5 10 15

Sequence listing.txt
Ala Val Phe Val Ser Pro Ser Gln Val Gly Val Gln Asp Pro Cys Val
20 25 30

Pro Pro Leu
35